

Claims

1. A method for controlling an internal combustion engine to maintain pressure in a brake booster during warmup of an exhaust gas treatment device coupled to the internal combustion engine, the brake booster being coupled to an intake of the internal combustion engine and being actuated by a reduced pressure in the intake, comprising: monitoring pressure in the brake booster; and decreasing pressure in the engine intake when said pressure in the brake booster is greater than a threshold pressure.
2. The method of claim 1 wherein said threshold pressure is a pressure above which an operational capability of the brake booster is less than a desired operational capability.
3. The method of claim 1 wherein said monitoring comprises measuring a pressure in a low pressure side of the brake booster.
4. The method of claim 1 wherein monitoring comprises measuring a pressure difference between a high pressure and a low pressure side of the brake booster.
5. The method of claim 1, further comprising:
Increasing engine speed after startup of the engine to ensure a sufficient partial vacuum in the engine intake.
6. The method of claim 5 wherein said increase is based on providing a desired functional capability of the brake booster.
7. The method of claim 1, further comprising:
reducing an amount of spark retard to bring said brake booster pressure below said threshold wherein said spark retard is employed to warmup the exhaust gas treatment device.

8. The method of claim 5, further comprising:
reducing an amount of spark retard to bring said brake booster pressure
below said threshold when said increasing of engine speed is insufficient to
bring about the brake booster vacuum below said threshold.

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9. An engine control system for the internal combustion engine of a
motor vehicle having an exhaust gas treatment arrangement coupled to the
engine, a brake booster actuated by a vacuum being coupled to the intake of
the internal combustion engine, comprising:

10 a control system which monitors pressure in the brake booster and
decreases pressure in the engine intake when said pressure in the brake
booster is greater than a threshold pressure

10. The system of claim 9, further comprising: a pressure sensor on a
15 low pressure side of the brake booster.

11. The system of claim 9, further comprising: a differential pressure
sensor between low and high pressure sides of the brake booster.

20 12. The system of claim 9 wherein said control system causes engine
speed to increase when said pressure is greater than a threshold pressure.

13. The system of claim 9 wherein said control system advances spark
timing when said pressure is greater than a threshold pressure.

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14. The system of claim 12 wherein said control system advances spark
timing when said engine speed increase is insufficient to cause said intake
pressure to exceed said threshold pressure.